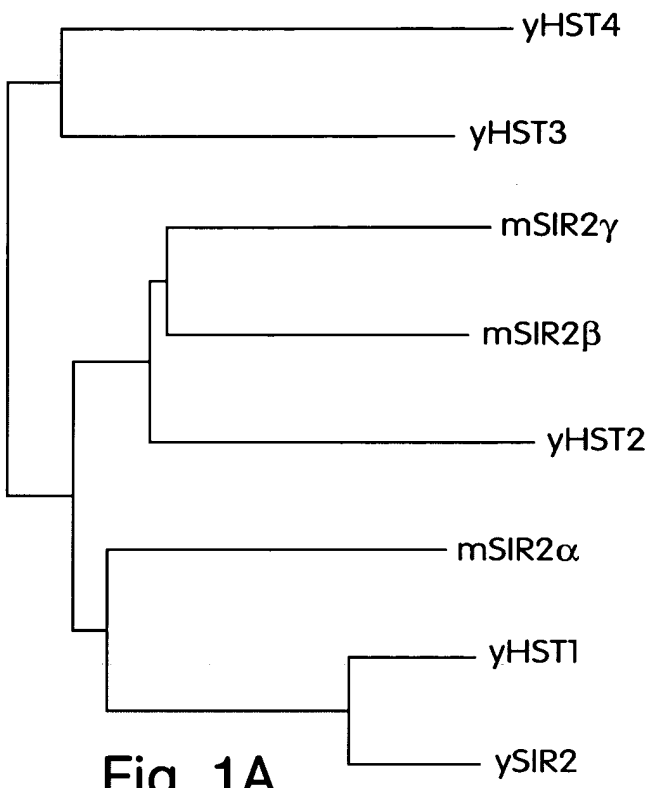

Fig. 1A

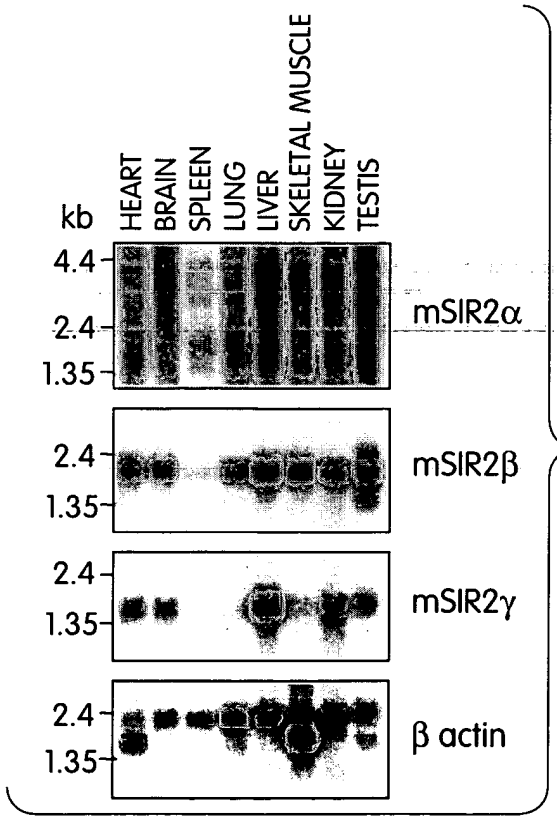

Fig. 1B

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  41  PGLGRSPGEPSAAVAPAAAGCEAASAAAPAALWREAAGAA
  81  ASAEREAPATAVAGDGDNGSGLRREPRAADDFDDDEGEEE
 121  DEAAAAAAAAAAIGYRDNLLLTDGLLTNGFHSCESDDDDRT
 161  SHASSSDWTPRPRIGPYTFVQQHLMIGTDPRTILKDLLPE
 201  TIPPPELDDMTLWQIVINILSEPPKRKKRKDINTIEDAVK
 241  LLQECKKIIVLTGAGVSVSCGIPDFRSRDGIYARLAVDFP
 281  DLPDPQAMFDIEYFRKDPRPFFKFAKEIYPGQFQPSLCHK
 321  FIALSDKEGKLLRNYTQNIDTLEQVAGIQRILQCHGSFAT
 361  ASCLICKYKVDCEAVRGDIFNQVVPRCPRCPADEPLAIMK
 401  PEIVFFGENLPEQFHRAMKYDKDEVDLLIVIGSSLKVRPV
 441  ALIPSSIPHEVPQILINREPLPHLHFDVELLGDCDVIINE
 481  LCHRLGGEYAKLCCNPVKLSEITEKPPRPQKELVHLSELP
 521  PTPLHISEDSSSPERTVPQDSSVIATLVDQATNNNVNDLE
 561  VSESSCVEEKPQEVQTSRNVENINVENPDFKAVGSSTADK
 601  NERTSVAETVRKCWPNRLAKEQISKRLEGNQYLFVPPNRY
 641  IFHGAEVYSDSEDDVLSSSSCGSNSDSGTCQSPSLEEPLE
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 721  IATRQELTDVNYPSDKS
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Fig. 2A

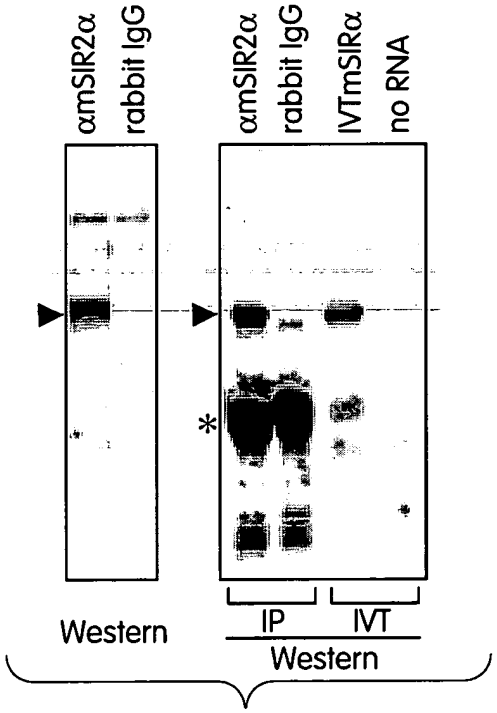

Fig. 2B

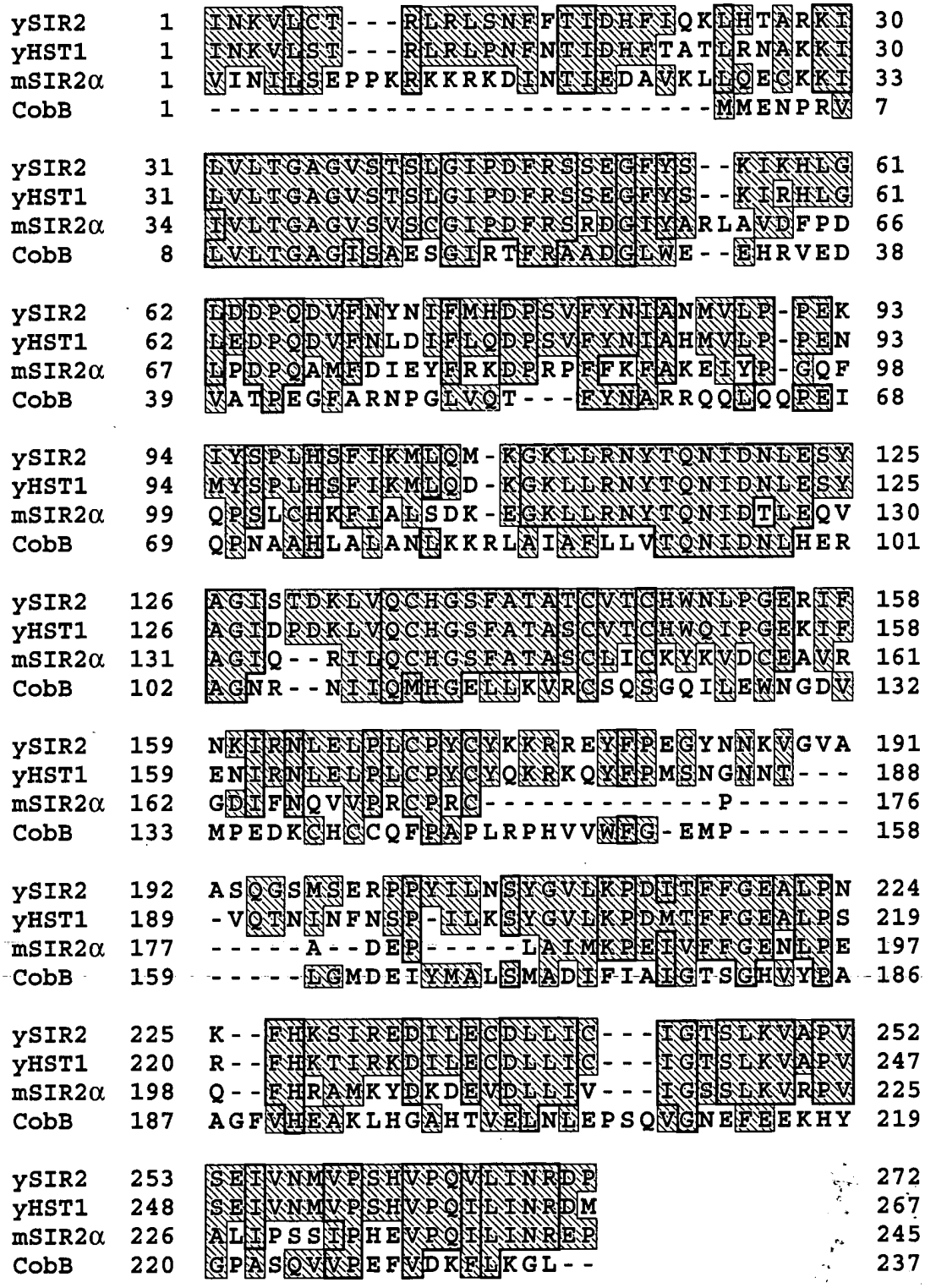

Fig. 2C

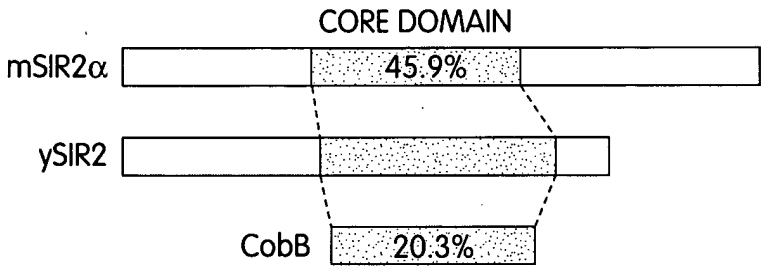

Fig. 2D

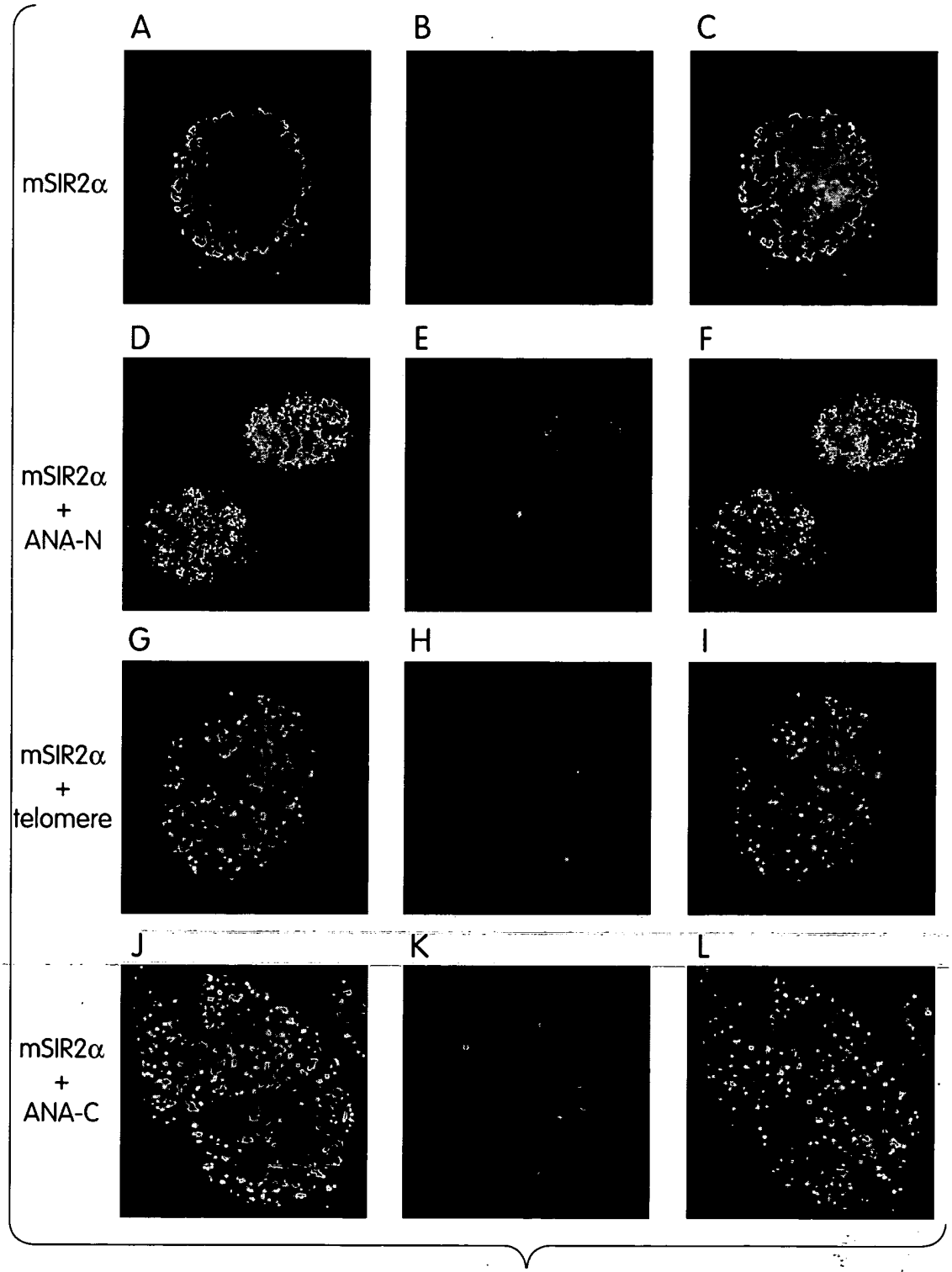

Fig. 3

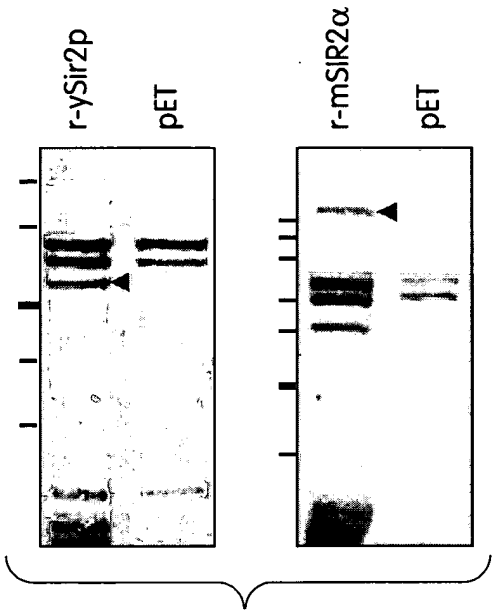

Fig. 4A

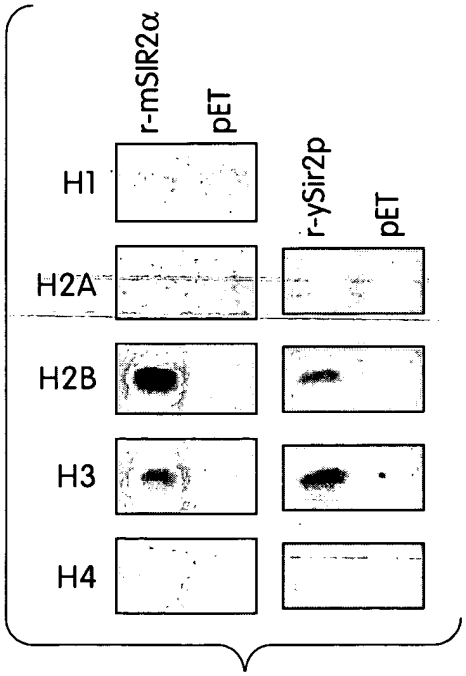

Fig. 4B

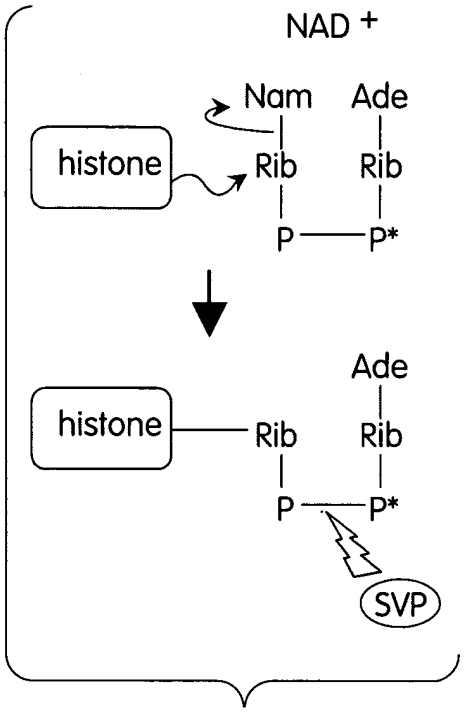

Fig. 4C

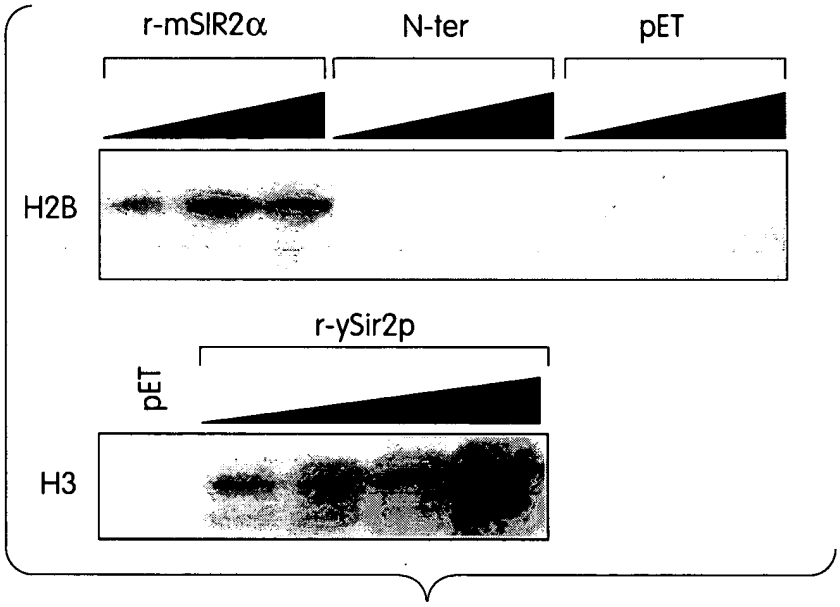

Fig. 4D

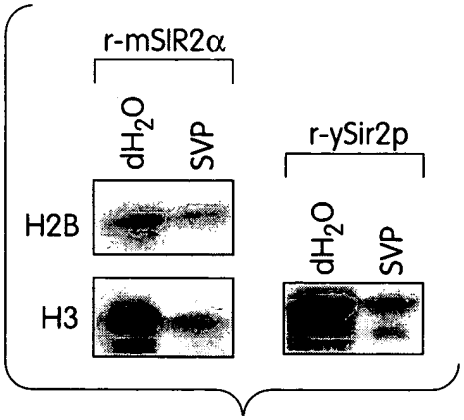

Fig. 4E

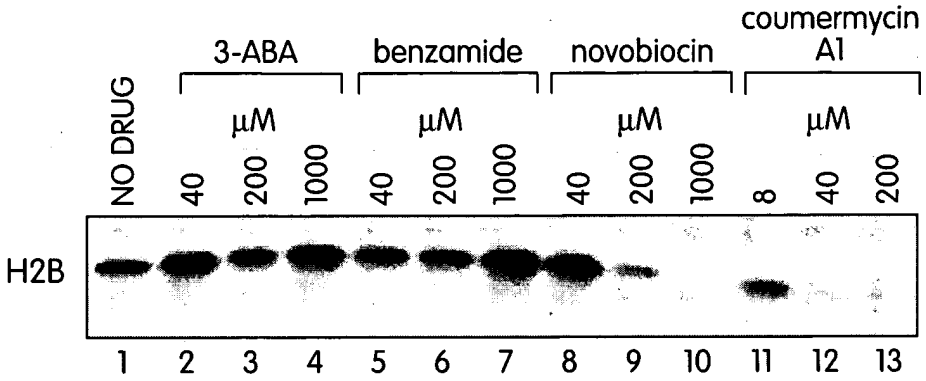

Fig. 4F

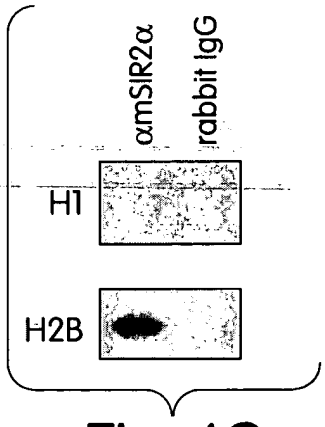

Fig. 4G

H3

unAc
diAc ARTKQTARKSTGGKAPRKQLC

H4

monoAc SGRGKGGKGLGKGGAKRHRC
5 8 12 16

tetraAc AGGKGGKGMGKVGAKRHSC

Fig. 5A

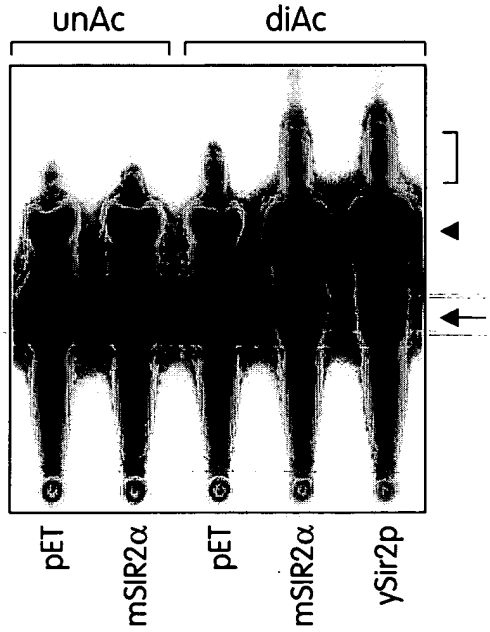

Fig. 5B

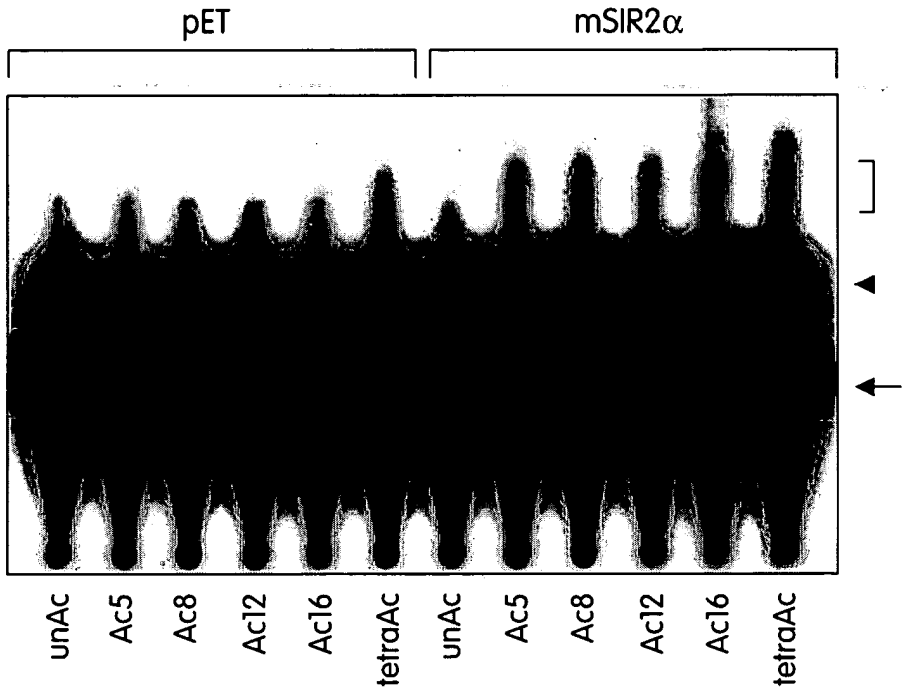

Fig. 5C

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ySIR2   258  LVLTGAGVSTSLGIPDFRSSEGFYS--KIKHLG

mSIR2α  282  LPDPQAMFDIEYFRKDPRPFFKFAKEIYP-GQF
ySIR2   289  LDDPQDVFNYNIFMHDPSVFYNIANMVLP-PEK

mSIR2α  314  QPSLCHKFIALSDK-EGKLLRNYTQNIDTLEQV
ySIR2   321  IYSPLHSFIKMLQM-KGKLLRNYTQNIDNLESY

mSIR2α  346  AGIQ--RILQCHGSFATASCLICKYKVDCEAVR
ySIR2   353  AGISTDKLVQCHGSFATATCVTCHWNLPGERIF
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Fig. 6A

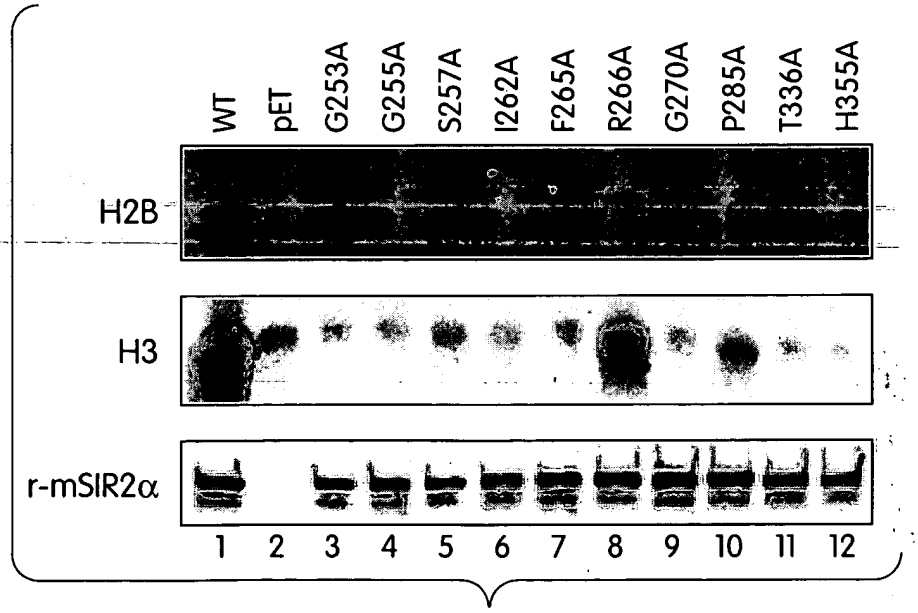

Fig. 6B

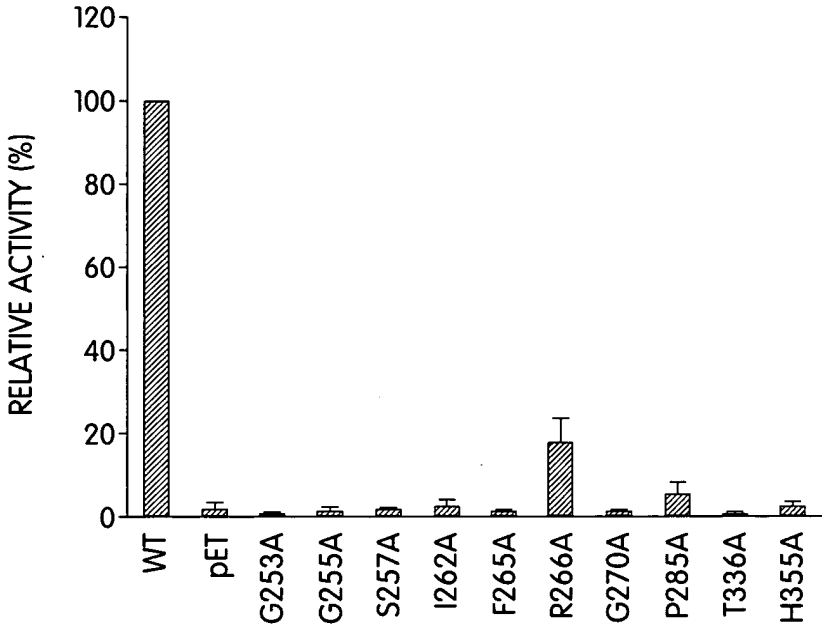

Fig. 6C

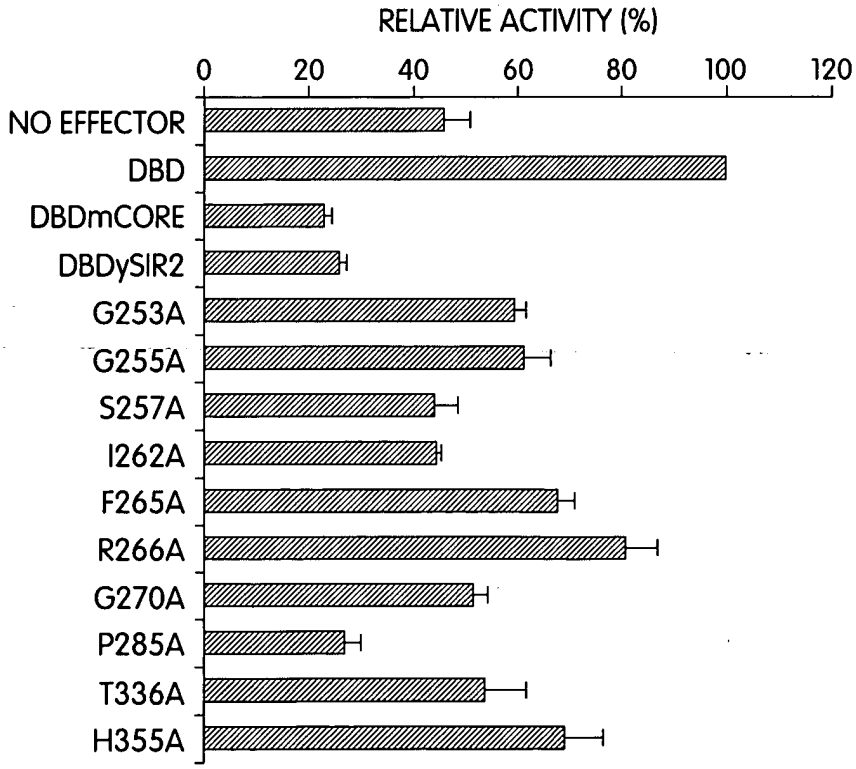

Fig. 6D

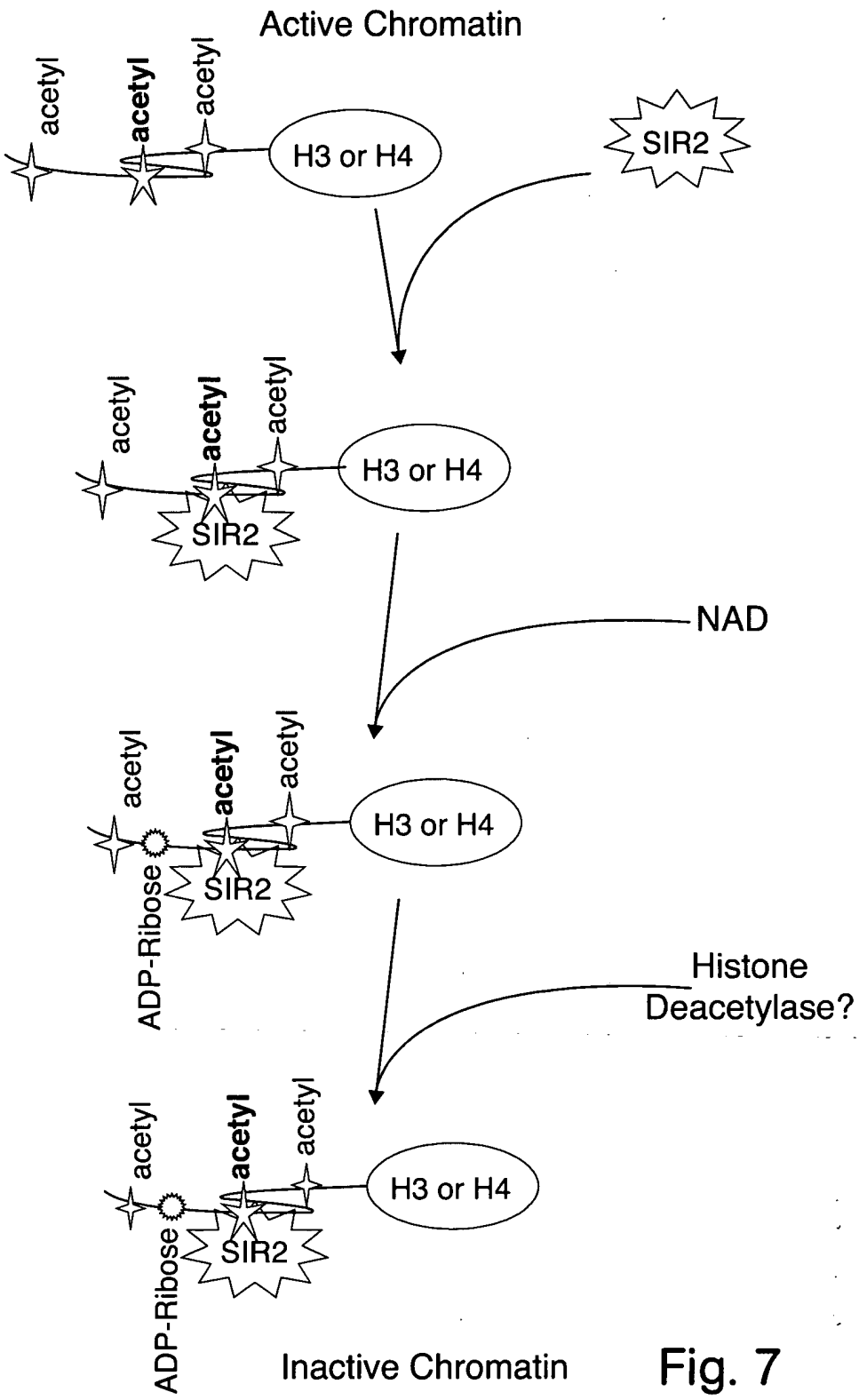

Fig. 7

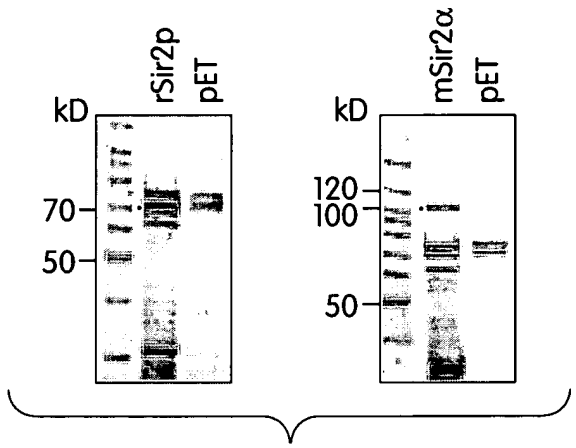

Fig. 8A

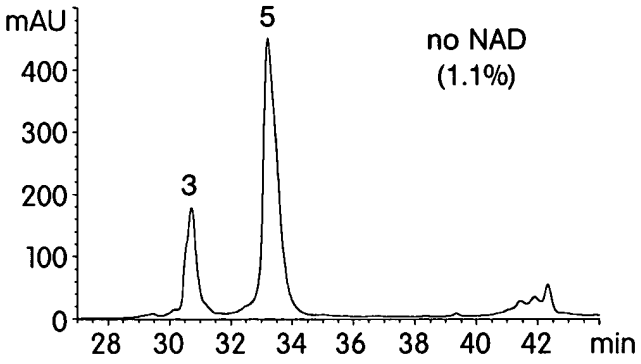

Fig. 8B

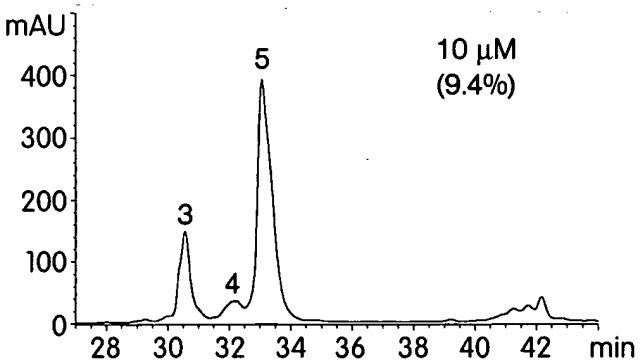

Fig. 8C

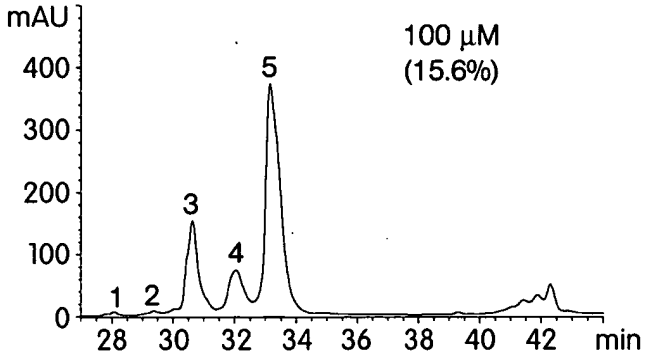

Fig. 8D

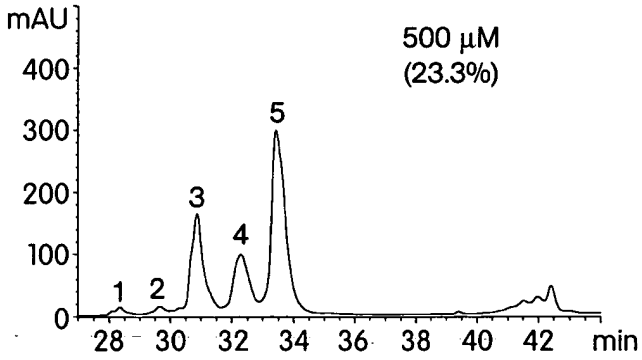

Fig. 8E

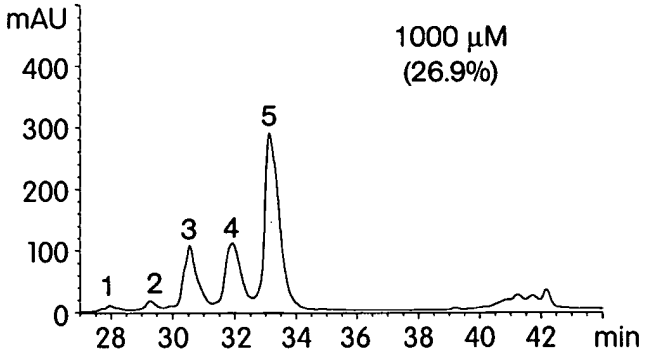

Fig. 8F

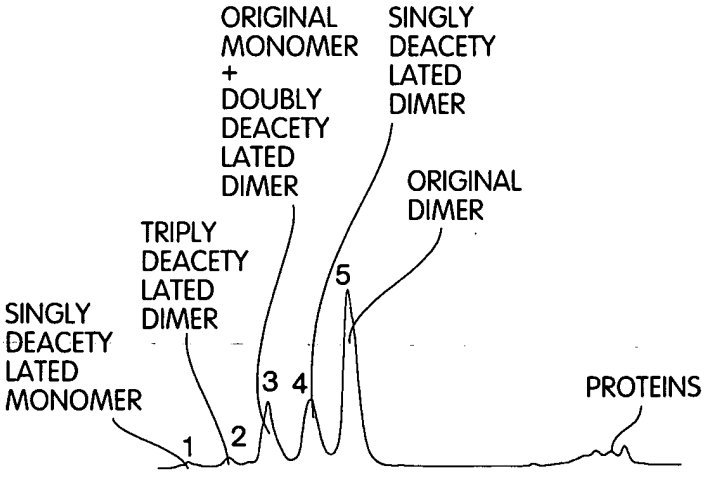

Fig. 8G

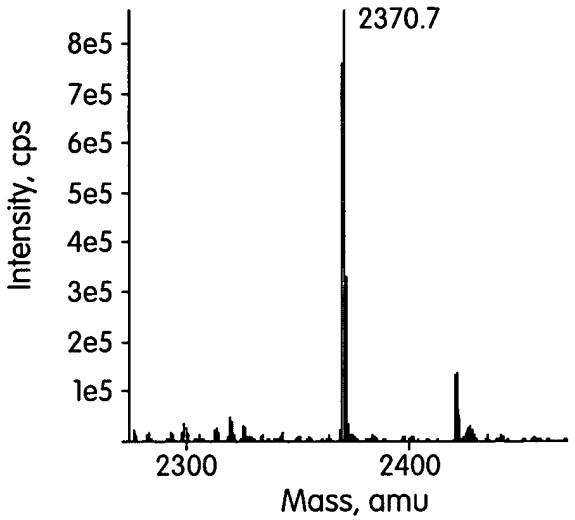

Fig. 9A

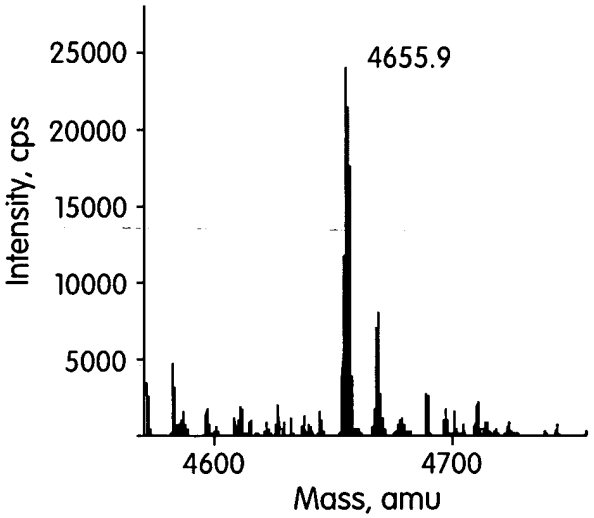

Fig. 9B

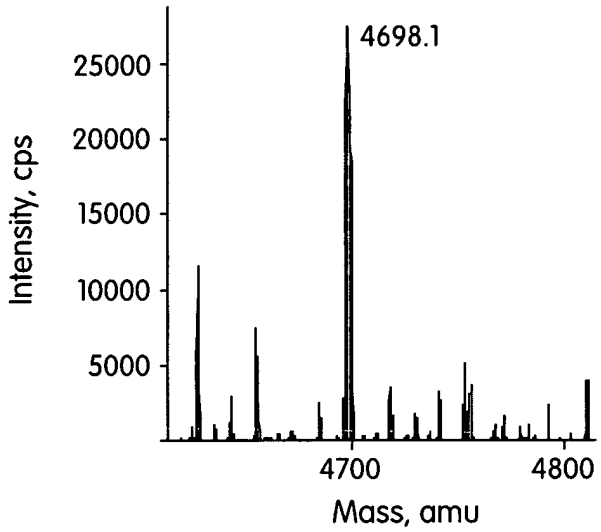

Fig. 9C

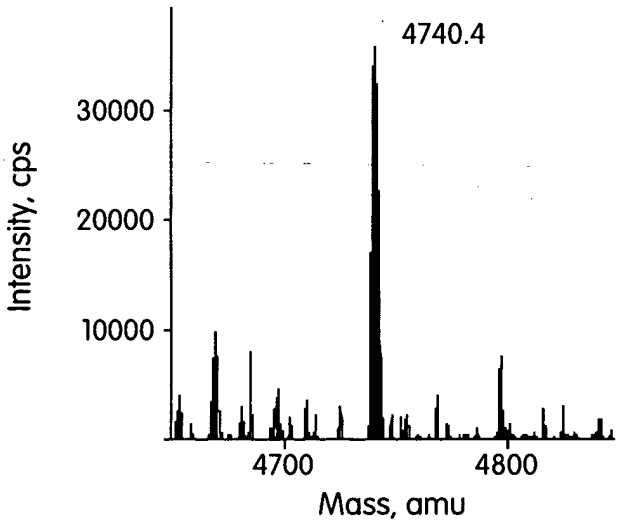

Fig. 9D

peak 4

9

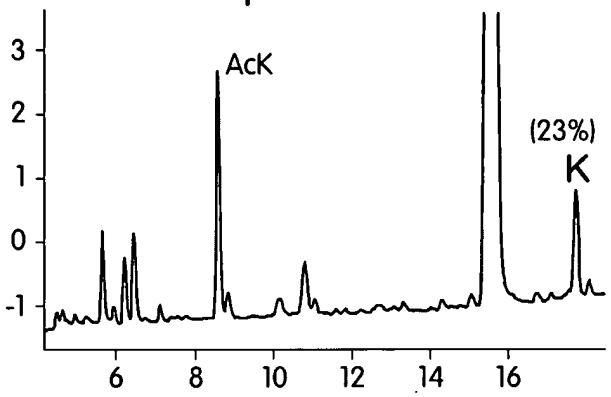

Fig. 10A

peak 4

14

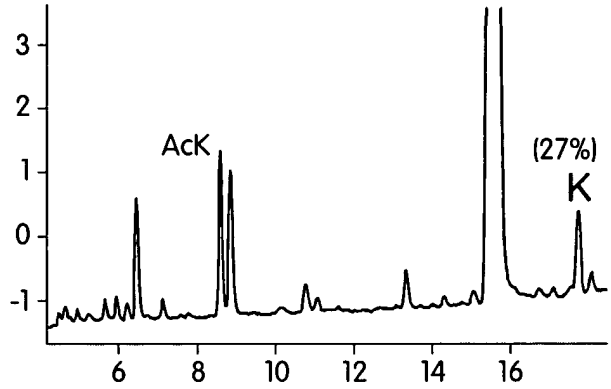

Fig. 10B

peak 4

18

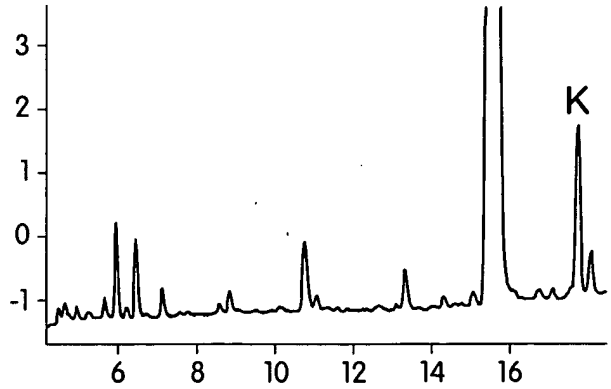

Fig. 10C

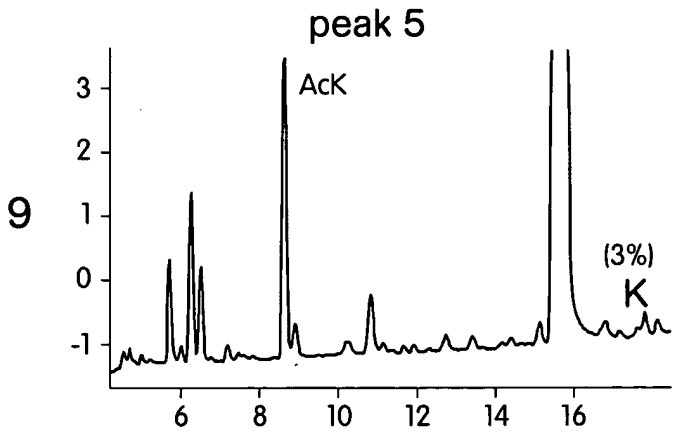

Fig. 10D

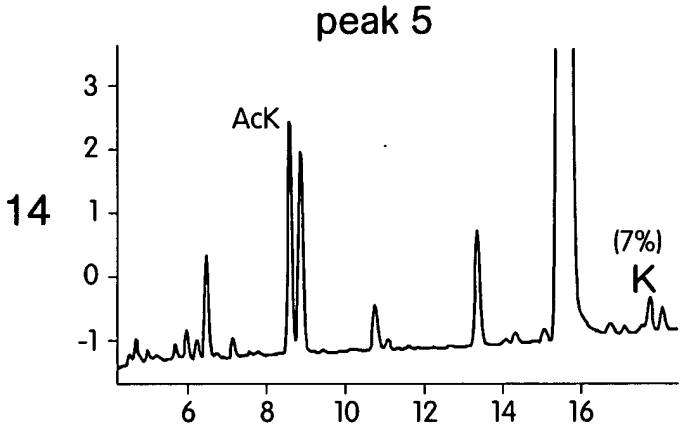

Fig. 10E

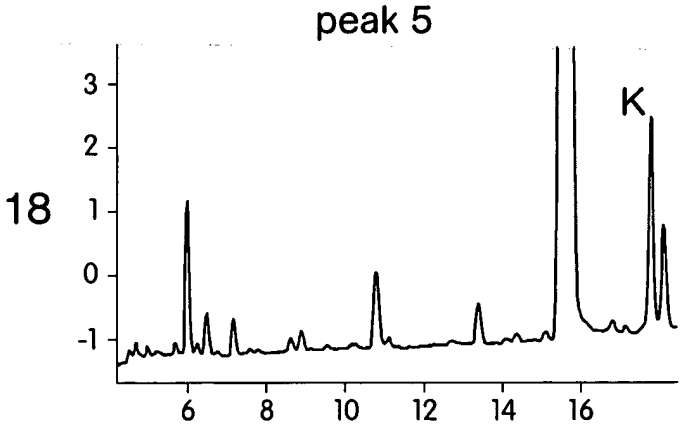

Fig. 10F

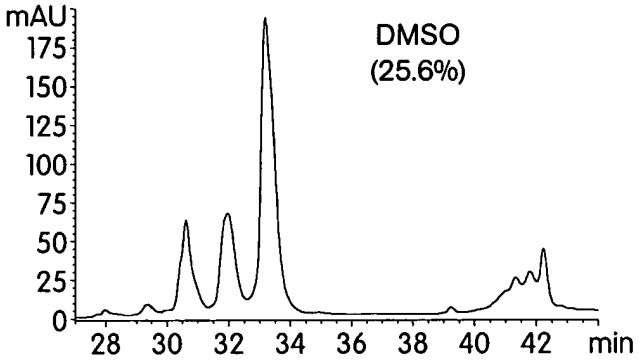

Fig. 11A

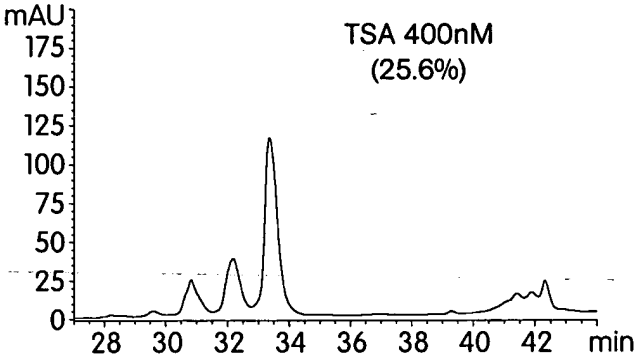

Fig. 11B

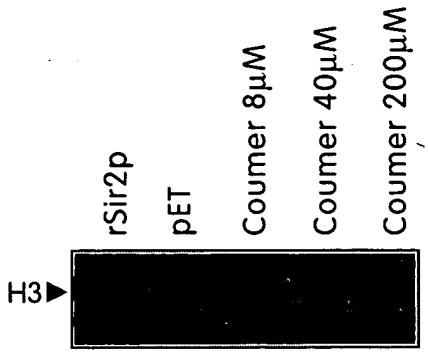

Fig. 11C

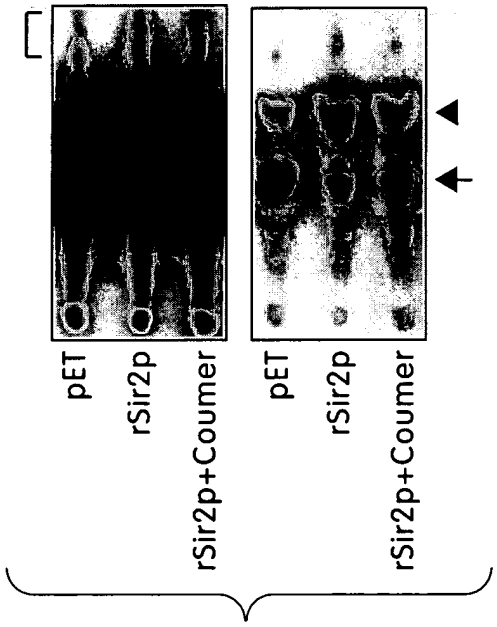

Fig. 11D

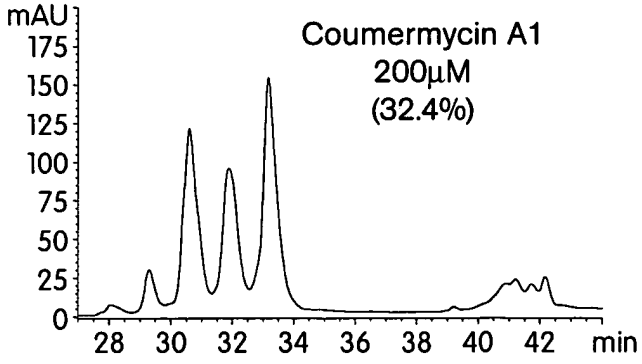

Fig. 11E

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 41  PGLGRSPGEPSAAVAPAAAGCEAASAAAPAALWREAAGAA
 81  ASAEREAPATAVAGDGDNGSGLRREPRAADDFDDDEGEEE
121  DEAAAAAAAAAAIGYRDNLLLTDGLLTNGFHSCESDDDDRT
161  SHASSSDWTPRPRIGPYTFVQQHLMIGTDPRTILKDLLPE
201  TIPPPELDDMTLWQIVINILSEPPKRKKRKDINTIEDAVK
241  LLQECKKIIVLTGAGVSVSCGIPDFRSRDGIYARLAVDFP
281  DLPDPQAMFDIEYFRKDPRPFFKFAKEIYPGQFQPSLCHK
321  FIALSDKEGKLLRNYTQNIDTLEQVAGIQRILQCHGSFAT
361  ASCLICKYKVDCEAVRGDIFNQVVPRCPRCPADEPLAIMK
401  PEIVFFGENLPEQFHRAMKYDKDEVDLLIVIGSSLKVRPV
441  ALIPSSIPHEVPQILINREPLPHLHFDVELLGDCDVIINE
481  LCHRLGGEYAKLCCNPVKLSEITEKPPRPQKELVHLSELP
521  PTPLHISEDSSSPERTVPQDSSVIATLVDQATNNNVNDLE
561  VSESSCVEEKPQEVQTSRNVENINVENPDFKAVGSSTADK
601  NERTSVAETVRKCWPNRLAKEQISKRLEGNQYLFVPPNRY
641  IFHGAEVYSDSEDDVLSSSSCGSNSDSGTCQSPSLEEPLE
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721  IATRQELTDVNYPSDKS
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Fig. 12A

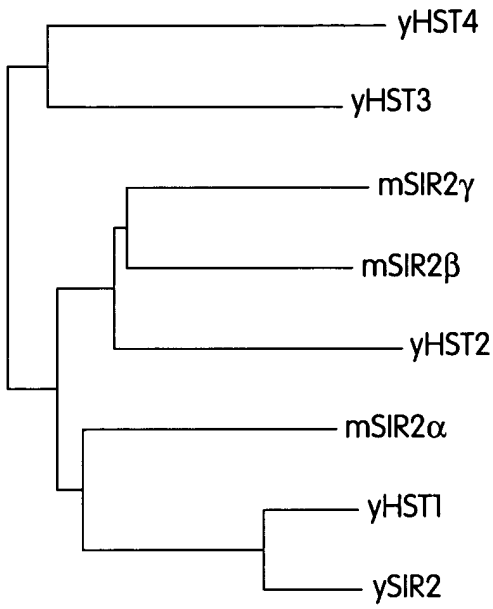

Fig. 12B

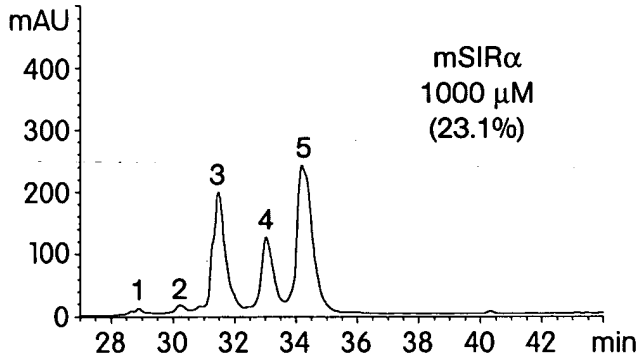

Fig. 12C

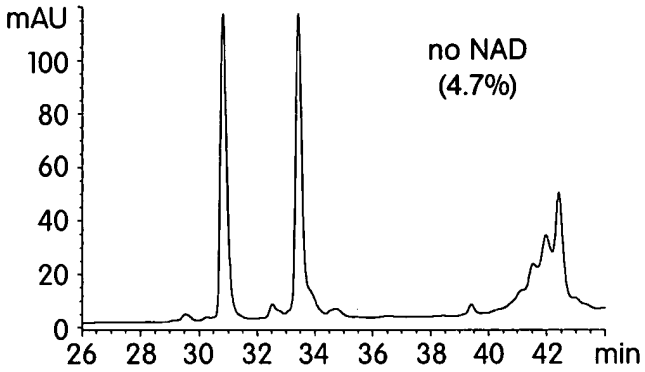

Fig. 13A

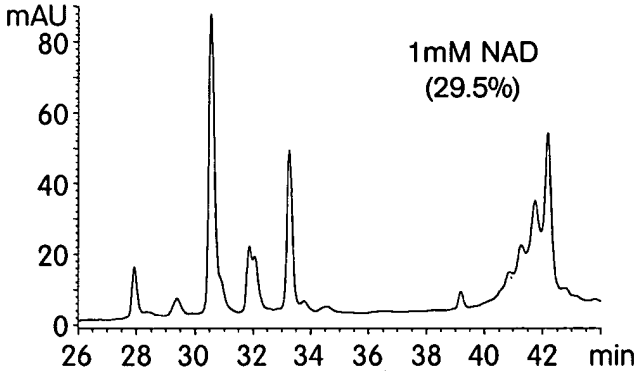

Fig. 13B

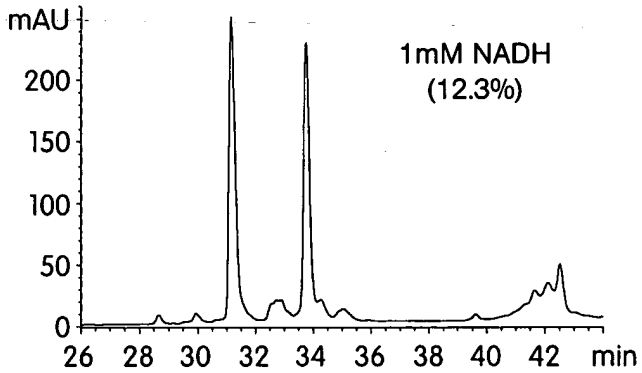

Fig. 13C

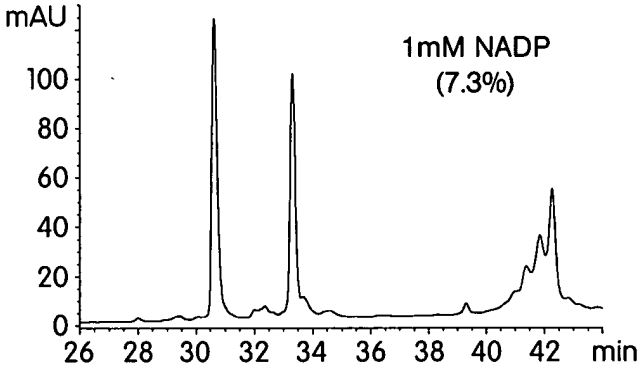

Fig. 13D

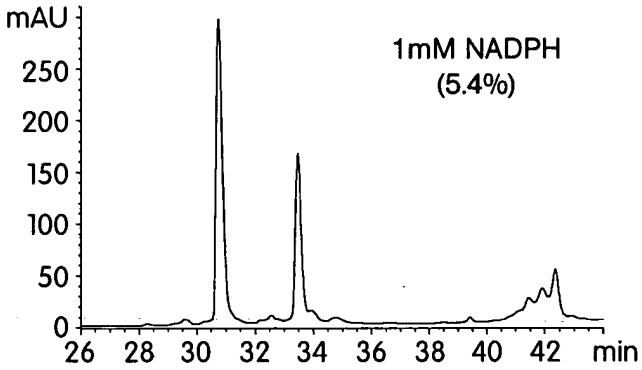

Fig. 13E

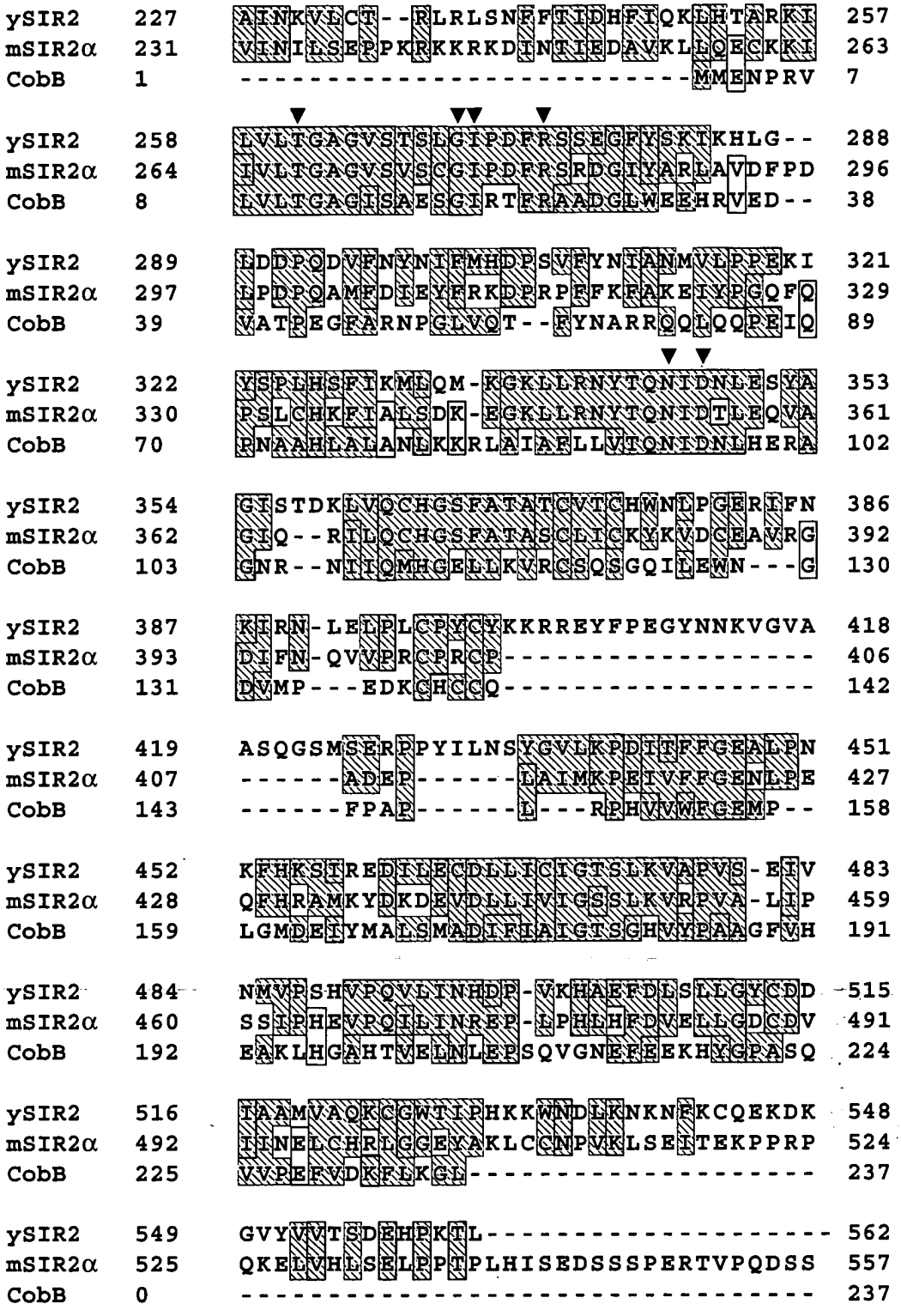

Fig. 14A

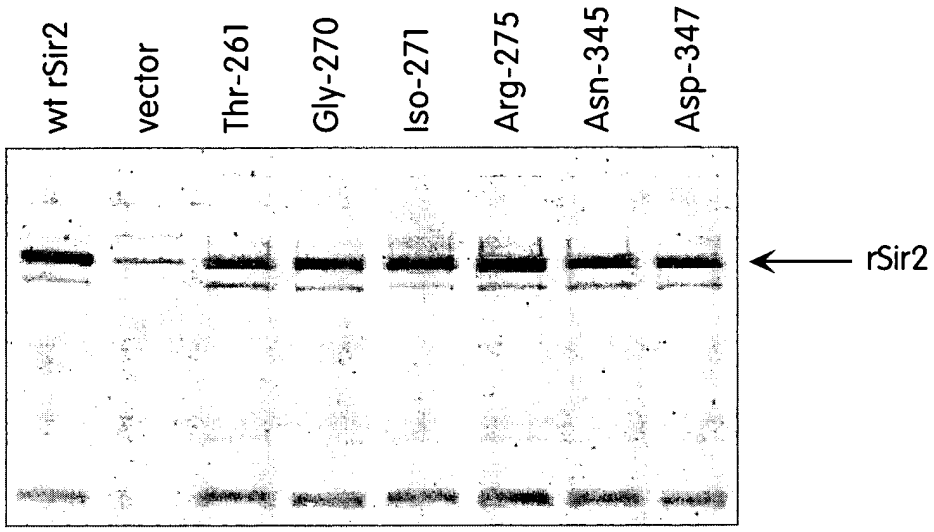

Fig. 14B

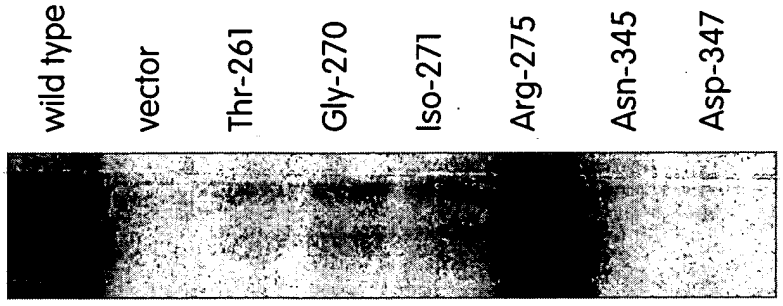

Fig. 14C

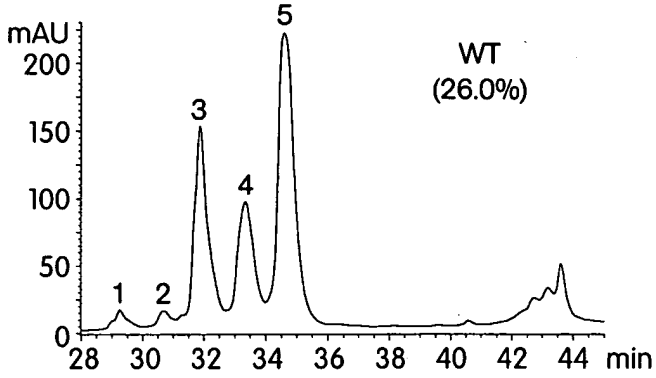

Fig. 15A

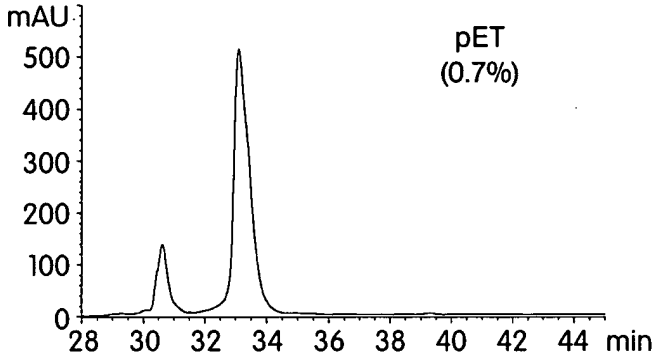

Fig. 15B

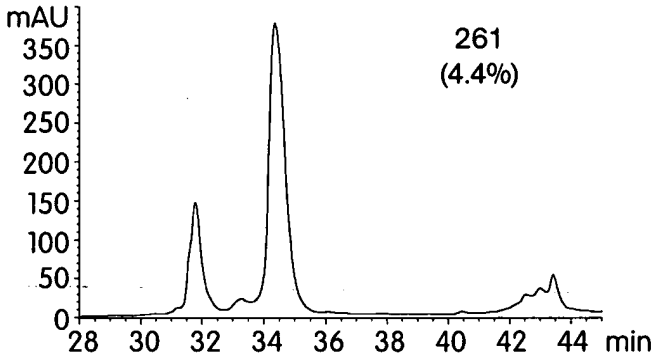

Fig. 15C

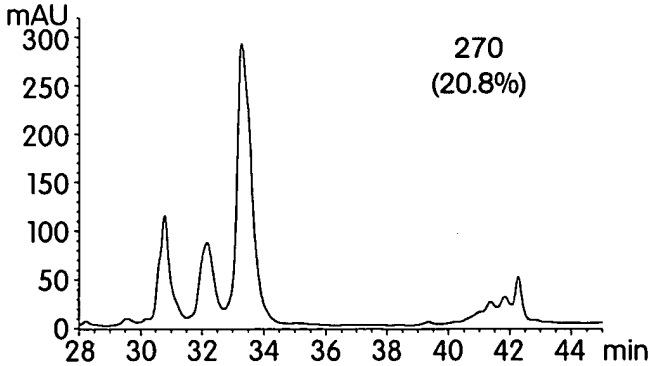

Fig. 15D

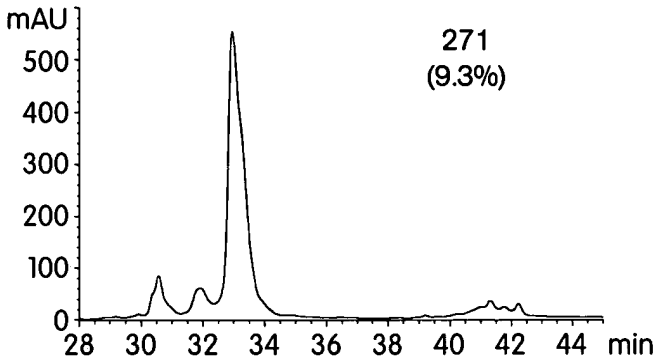

Fig. 15E

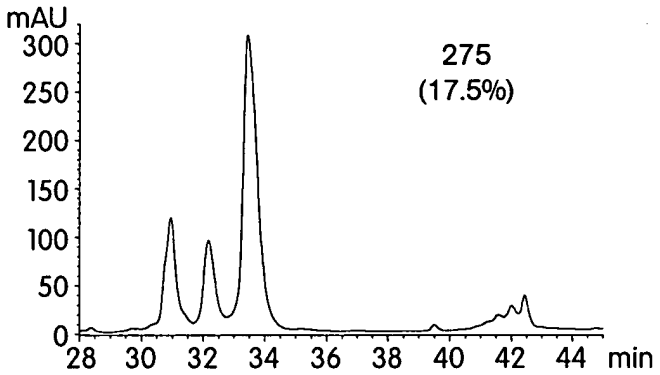

Fig. 15F

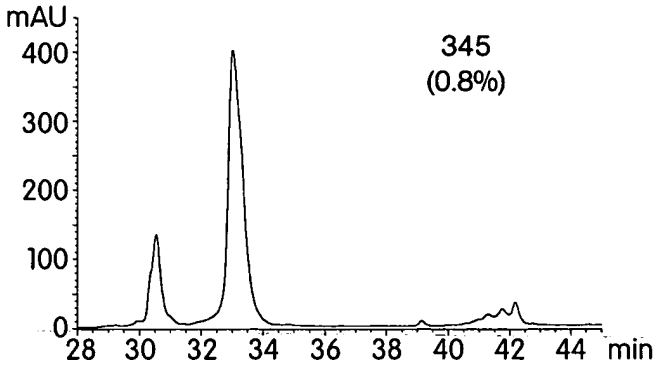

Fig. 15G

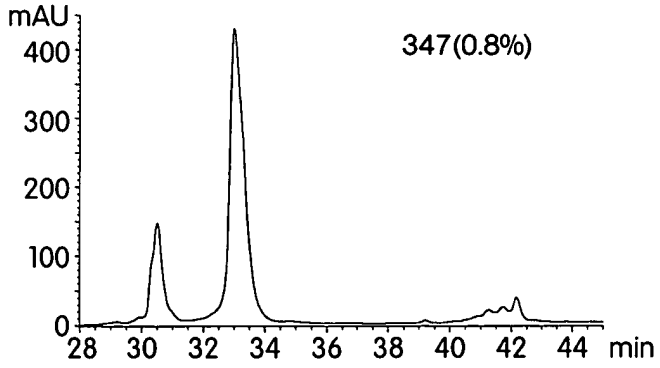

Fig. 15H

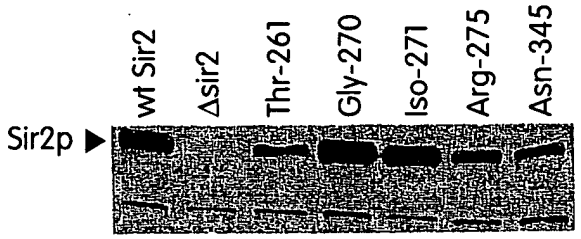

Fig. 16A

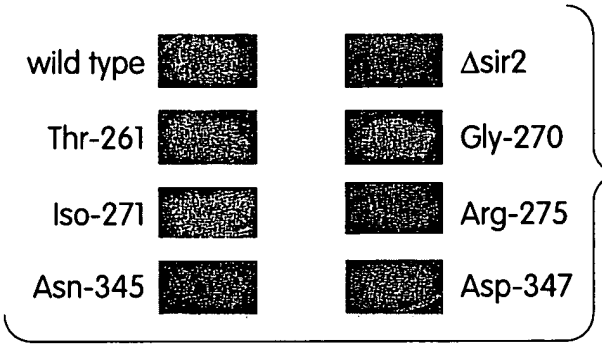

Fig. 16B

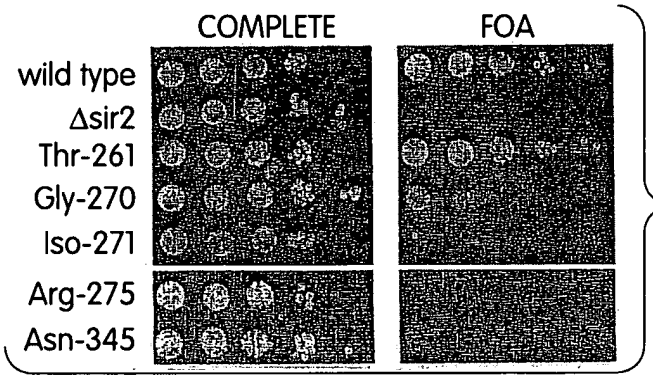

Fig. 16C

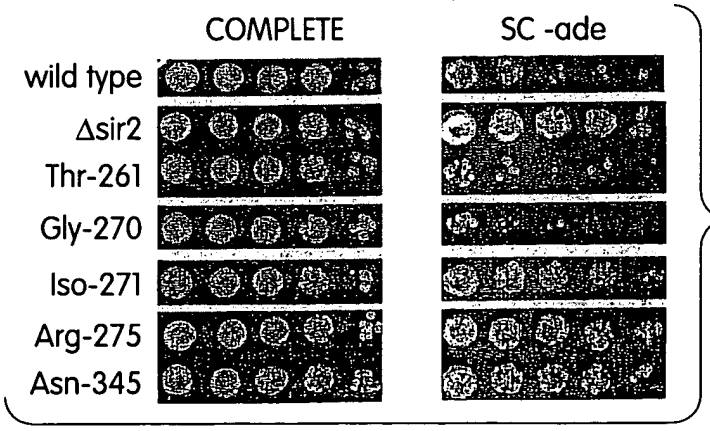

Fig. 16D

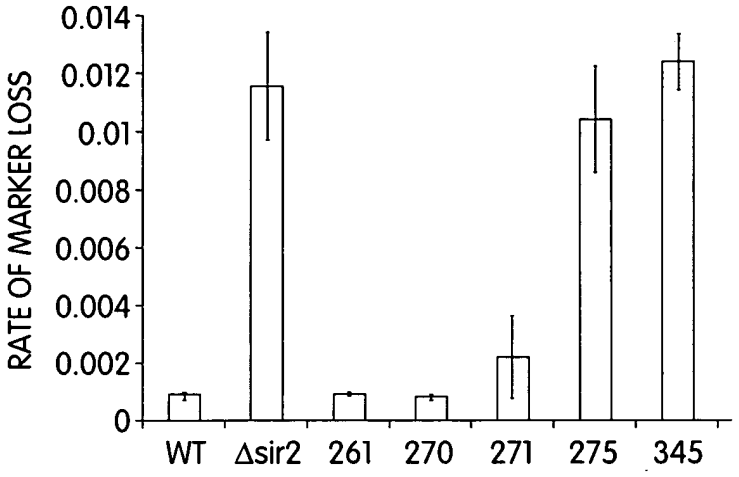

Fig. 17A

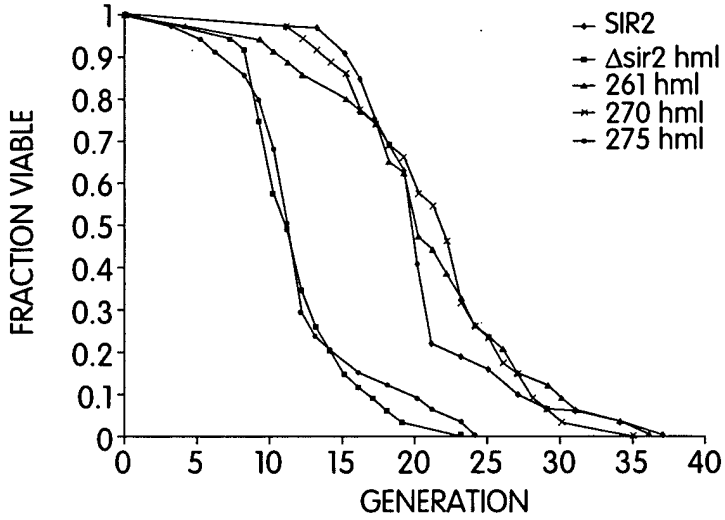

Fig. 17B

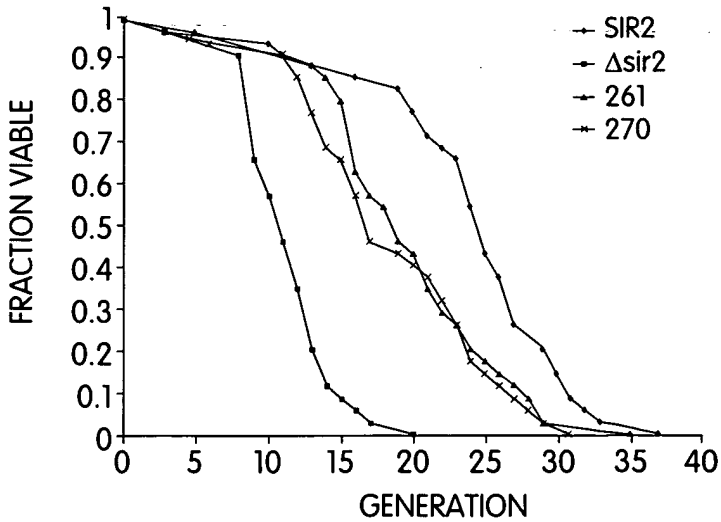

Fig. 17C

Mutant	ADP-Rib. Activity (% of wt)	Deacetylase Activity (% of wt)	HM Silencing	Telomere Silencing	rDNA Silencing	rDNA Recombi-nation	Mean Life Span (HML+)
sir2Δ	0%	2.7%	-	-	-	1.15%	11.4
wildtype	100%	100%	+	+	+	0.09%	24.4
Thr-261	4%	17%	+	+	+	0.09%	19.8
Gly-270	7%	80%	+	+/-	+	0.08%	18.9
Iso-271	8%	36%	+	-	+/-	0.22%	ND
Arg-275	100%	67%	-	-	-	1.03%	ND
Arg-345	0%	3%	-	-	-	1.22%	ND
Asp-347	0%	3%	-	ND	ND	ND	ND

Fig. 18

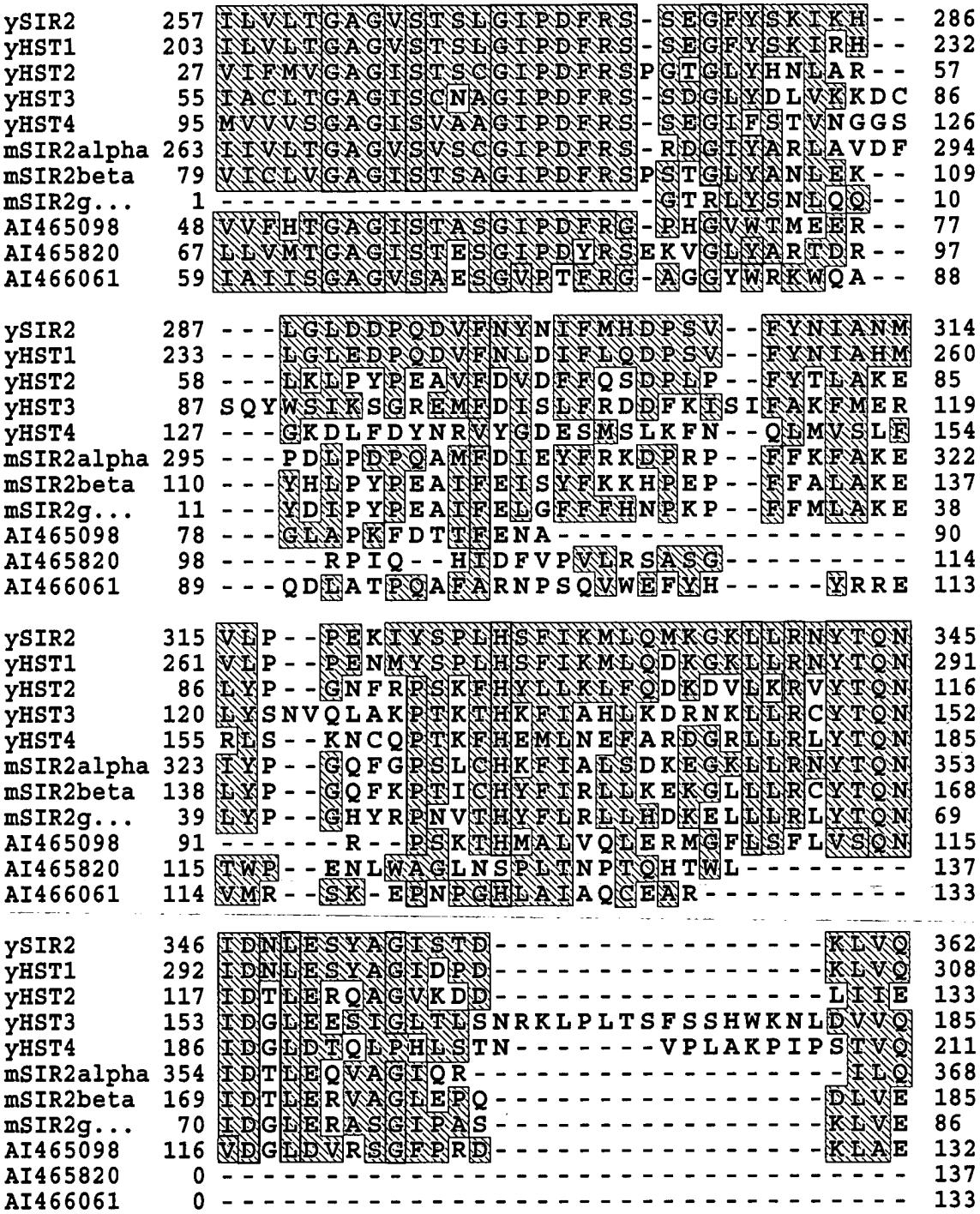

Fig. 19

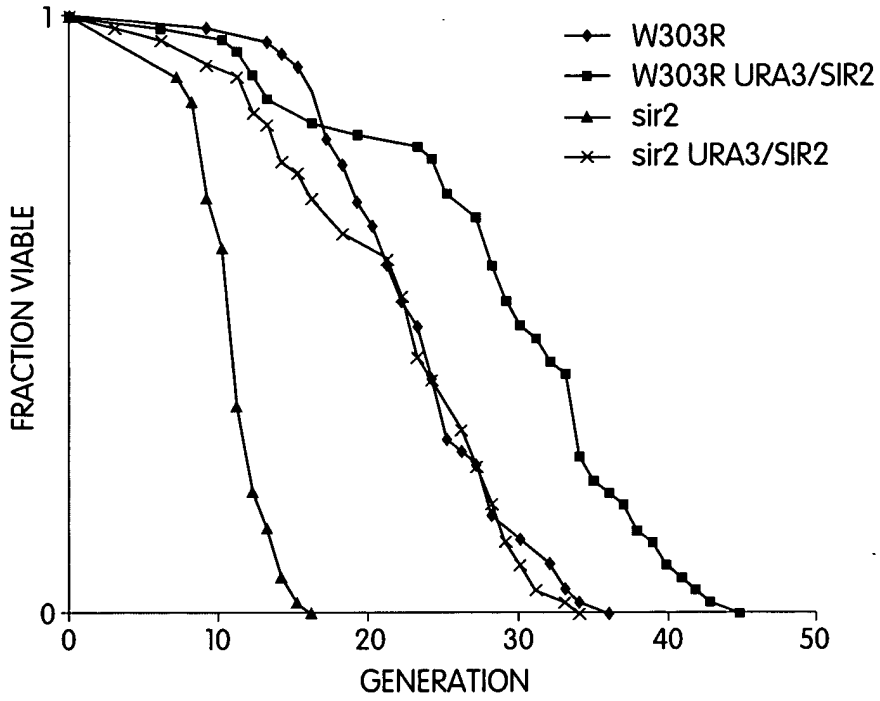

Fig. 20

```
        10         20         30         40         50         60
GCGGAGCAGAGGAGGCGAGGGCGGAGGGCCAGAGAGGCAGTTGGAAGATGGCGGACGAGG
                                                  M  A  D  E  V

        70         80         90        100        110        120
TGGCGCTCGCCCTTCAGGCCGCCGGCTCCCCTTCCGCGGCGGCCGCCATGGAGGCCGCGT
   A  L  A  L  Q  A  A  G  S  P  S  A  A  A  A  M  E  A  A  S

       130        140        150        160        170        180
CGCAGCCGGCGGACGAGCCGCTCCGCAAGAGGCCCCGCCGAGACGGGCCTGGCCTCGGGC
   Q  P  A  D  E  P  L  R  K  R  P  R  R  D  G  P  G  L  G  R

       190        200        210        220        230        240
GCAGCCCGGGCGAGCCGAGCGCAGCAGTGGCGCCGGCGGCCGCGGGGTGTGAGGCGGCGA
   S  P  G  E  P  S  A  A  V  A  P  A  A  A  G  C  E  A  A  S

       250        260        270        280        290        300
GCGCCGCGGCCCCGGCGGCGCTGTGGCGGGAGGCGGCAGGGGCGGCGGCGAGCGCGGAGC
   A  A  A  P  A  A  L  W  R  E  A  A  G  A  A  A  S  A  E  R

       310        320        330        340        350        360
GGGAGGCCCCGGCGACGGCCGTGGCCGGGGACGGAGACAATGGGTCCGGCCTGCGGCGGG
   E  A  P  A  T  A  V  A  G  D  G  D  N  G  S  G  L  R  R  E

       370        380        390        400        410        420
AGCCGAGGGCGGCTGACGACTTCGACGACGACGAGGGCGAGGAGGAGGACGAGGCGGCGG
   P  R  A  A  D  D  F  D  D  D  E  G  E  E  E  D  E  A  A  A

       430        440        450        460        470        480
CGGCAGCGGCGGCGGCAGCGATCGGCTACCGAGACAACCTCCTGTTGACCGATGGACTCC
   A  A  A  A  A  A  I  G  Y  R  D  N  L  L  L  T  D  G  L  L

       490        500        510        520        530        540
TCACTAATGGCTTTCATTCCTGTGAAAGTGATGACGATGACAGAACGTCACACGCCAGCT
   T  N  G  F  H  S  C  E  S  D  D  D  D  R  T  S  H  A  S  S

       550        560        570        580        590        600
CTAGTGACTGGACTCCGCGGCCGCGGATAGGTCCATATACTTTTGTTCAGCAACATCTCA
   S  D  W  T  P  R  P  R  I  G  P  Y  T  F  V  Q  Q  H  L  M

       610        620        630        640        650        660
TGATTGGCACCGATCCTCGAACAATTCTTAAAGATTTATTACCAGAAACAATTCCTCCAC
   I  G  T  D  P  R  T  I  L  K  D  L  L  P  E  T  I  P  P  P

       670        680        690        700        710        720
CTGAGCTGGATGATATGACGCTGTGGCAGATTGTTATTAATATCCTTTCAGAACCACCAA
   E  L  D  D  M  T  L  W  Q  I  V  I  N  I  L  S  E  P  P  K

       730        740        750        760        770        780
AGCGGAAAAAAAGAAAAGATATCAATACAATTGAAGATGCTGTGAAGTTACTGCAGGAGT
   R  K  K  R  K  D  I  N  T  I  E  D  A  V  K  L  L  Q  E  C

       790        800        810        820        830        840
GTAAAAAGATAATAGTTCTGACTGGAGCTGGGGTTTCTGTCTCCTGTGGGATTCCTGACT
   K  K  I  I  V  L  T  G  A  G  V  S  V  S  C  G  I  P  D  F

       850        860        870        880        890        900
TCAGATCAAGAGACGGTATCTATGCTCGCCTTGCGGTGGACTTCCCAGACCTCCCAGACC
   R  S  R  D  G  I  Y  A  R  L  A  V  D  F  P  D  L  P  D  P
```

Fig. 21A

```
      910       920       930       940       950       960
CTCAAGCCATGTTTGATATTGAGTATTTTAGAAAAGACCCAAGACCATTCTTCAAGTTTG
   Q  A  M  F  D  I  E  Y  F  R  K  D  P  R  P  F  F  K  F  A

      970       980       990      1000      1010      1020
CAAAGGAAATATATCCCGGACAGTTCCAGCCGTCTCTGTGTCACAAATTCATAGCTTTGT
   K  E  I  Y  P  G  Q  F  Q  P  S  L  C  H  K  F  I  A  L  S

     1030      1040      1050      1060      1070      1080
CAGATAAGGAAGGAAAACTACTTCGAAATTATACTCAAAATATAGATACCTTGGAGCAGG
   D  K  E  G  K  L  L  R  N  Y  T  Q  N  I  D  T  L  E  Q  V

     1090      1100      1110      1120      1130      1140
TTGCAGGAATCCAAAGGATCCTTCAGTGTCATGGTTCCTTTGCAACAGCATCTTGCCTGA
   A  G  I  Q  R  I  L  Q  C  H  G  S  F  A  T  A  S  C  L  I

     1150      1160      1170      1180      1190      1200
TTTGTAAATACAAAGTTGATTGTGAAGCTGTTCGTGGAGACATTTTTAATCAGGTAGTTC
   C  K  Y  K  V  D  C  E  A  V  R  G  D  I  F  N  Q  V  V  P

     1210      1220      1230      1240      1250      1260
CTCGGTGCCCTAGGTGCCCAGCTGATGAGCCACTTGCCATCATGAAGCCAGAGATTGTCT
   R  C  P  R  C  P  A  D  E  P  L  A  I  M  K  P  E  I  V  F

     1270      1280      1290      1300      1310      1320
TCTTTGGTGAAAACTTACCAGAACAGTTTCATAGAGCCATGAAGTATGACAAAGATGAAG
   F  G  E  N  L  P  E  Q  F  H  R  A  M  K  Y  D  K  D  E  V

     1330      1340      1350      1360      1370      1380
TTGACCTCCTCATTGTTATTGGATCTTCTCTGAAAGTGAGACCAGTAGCACTAATTCCAA
   D  L  L  I  V  I  G  S  S  L  K  V  R  P  V  A  L  I  P  S

     1390      1400      1410      1420      1430      1440
GTTCTATACCCCATGAAGTGCCTCAAATATTAATAAATAGGGAACCTTTGCCTCATCTAC
   S  I  P  H  E  V  P  Q  I  L  I  N  R  E  P  L  P  H  L  H

     1450      1460      1470      1480      1490      1500
ATTTTGATGTAGAGCTCCTTGGAGACTGCGATGTTATAATTAATGAGTTGTGTCATAGGC
   F  D  V  E  L  L  G  D  C  D  V  I  I  N  E  L  C  H  R  L

     1510      1520      1530      1540      1550      1560
TAGGTGGTGAATATGCCAAACTTTGTTGTAACCCTGTAAAGCTTTCAGAAATTACTGAAA
   G  G  E  Y  A  K  L  C  C  N  P  V  K  L  S  E  I  T  E  K

     1570      1580      1590      1600      1610      1620
AACCTCCACGCCCACAAAAGGAATTGGTTCATTTATCAGAGTTGCCACCAACACCTCTTC
   P  P  R  P  Q  K  E  L  V  H  L  S  E  L  P  P  T  P  L  H

     1630      1640      1650      1660      1670      1680
ATATTTCGGAAGACTCAAGTTCACCTGAAAGAACTGTACCACAAGACTCTTCTGTGATTG
   I  S  E  D  S  S  S  P  E  R  T  V  P  Q  D  S  S  V  I  A

     1690      1700      1710      1720      1730      1740
CTACACTTGTAGACCAAGCAACAAACAACAATGTTAATGATTTAGAAGTATCTGAATCAA
   T  L  V  D  Q  A  T  N  N  N  V  N  D  L  E  V  S  E  S  S
```

Fig. 21B

```
     1750       1760       1770       1780       1790       1800
GTTGTGTGGAAGAAAAACCACAAGAAGTACAGACTAGTAGGAATGTTGAGAACATTAATG
   C  V  E  E  K  P  Q  E  V  Q  T  S  R  N  V  E  N  I  N  V

     1810       1820       1830       1840       1850       1860
TGGAAAATCCAGATTTTAAGGCTGTTGGTTCCAGTACTGCAGACAAAAATGAAAGAACTT
   E  N  P  D  F  K  A  V  G  S  S  T  A  D  K  N  E  R  T  S

     1870       1880       1890       1900       1910       1920
CAGTTGCAGAAACAGTGAGAAAATGCTGGCCTAATAGACTTGCAAAGGAGCAGATTAGTA
   V  A  E  T  V  R  K  C  W  P  N  R  L  A  K  E  Q  I  S  K

     1930       1940       1950       1960       1970       1980
AGCGGCTTGAGGGTAATCAATACCTGTTTGTACCACCAAATCGTTACATATTCCACGGTG
   R  L  E  G  N  Q  Y  L  F  V  P  P  N  R  Y  I  F  H  G  A

     1990       2000       2010       2020       2030       2040
CTGAGGTATACTCAGACTCTGAAGATGACGTCTTGTCCTCTAGTTCCTGTGGCAGTAACA
   E  V  Y  S  D  S  E  D  D  V  L  S  S  S  S  C  G  S  N  S

     2050       2060       2070       2080       2090       2100
GTGACAGTGGCACATGCCAGAGTCCAAGTTTAGAAGAACCCTTGGAAGATGAAAGTGAAA
   D  S  G  T  C  Q  S  P  S  L  E  E  P  L  E  D  E  S  E  I

     2110       2120       2130       2140       2150       2160
TTGAAGAATTCTACAATGGCTTGGAAGATGATACGGAGAGGCCCGAATGTGCTGGAGGAT
   E  E  F  Y  N  G  L  E  D  D  T  E  R  P  E  C  A  G  G  S

     2170       2180       2190       2200       2210       2220
CTGGATTTGGAGCTGATGGAGGGGATCAAGAGGTTGTTAATGAAGCTATAGCTACAAGAC
   G  F  G  A  D  G  G  D  Q  E  V  V  N  E  A  I  A  T  R  Q

     2230       2240       2250       2260       2270       2280
AGGAATTGACAGATGTAAACTATCCATCAGACAAATCATAACACTATTGAAGCTGTCCGG
   E  L  T  D  V  N  Y  P  S  D  K  S  *

     2290       2300       2310       2320       2330       2340
ATTCAGGAATTGCTCCACCAGCATTGGGAACTTTAGCATGTCAAAAAAATGAATGTTTAC

     2350       2360       2370       2380       2390       2400
TTGTGAACTTGAACAAGGAAATCTGAAAGATGTATTATTTATAGACTGGAAAATAGATTG

     2410       2420       2430       2440       2450       2460
TCTTCTTGGATAATTTCTAAAGTTCCATCATTTCTGTTTGTACTTGTACATTCAACACTG

     2470       2480       2490       2500       2510       2520
TTGGTTGACTTCATCTTCCTTTCAAGGTTCATTTGTATGATACATTCGTATGTATGTATA

     2530       2540       2550       2560       2570       2580
ATTTTGTTTTTTGCCTAATGAGTTTCAACCTTTTAAAGTTTTCAAAAGCCATTGGAATGT

     2590       2600       2610       2620       2630       2640
TAATGTAAAGGGAACAGCTTATCTAGACCAAAGAATGGTATTTCACACTTTTTTGTTTGT

     2650       2660       2670       2680       2690       2700
AACATTGAATAGTTTAAAGCCCTCAATTTCTGTTCTGCTGAACTTTTATTTTTAGGACAG
```

Fig. 21C

```
      2710       2720       2730       2740       2750       2760
TTAACTTTTTAAACACTGGCATTTTCCAAAACTTGTGGCAGCTAACTTTTTAAAATCACA

      2770       2780       2790       2800       2810       2820
GATGACTTGTAATGTGAGGAGTCAGCACCGTGTCTGGAGCACTCAAAACTTGGGCTCAGT

      2830       2840       2850       2860       2870       2880
GTGTGAAGCGTACTTACTGCATCGTTTTTGTACTTGCTGCAGACGTGGTAATGTCCAAAC

      2890       2900       2910       2920       2930       2940
AGGCCCCTGAGACTAATCTGATAAATGATTTGGAAATGTGTTTCAGTTGTTCTAGAAACA

      2950       2960       2970       2980       2990       3000
ATAGTGCCTGTCTATATAGGTCCCCTTAGTTTGAATATTTGCCATTGTTTAATTAAATAC

      3010       3020       3030       3040       3050       3060
CTATCACTGTGGTAGAGCCTGCATAGATCTTCACCACAAATACTGCCAAGATGTGAATAT

      3070       3080       3090       3100       3110       3120
GCAAAGCCTTTCTGAATCTAATAATGGTACTTCTACTGGGGAGAGTGTAATATTTTGGAC

      3130       3140       3150       3160       3170       3180
TGCTGTTTTTCCATTAATGAGGAAAGCAATAGGCCTCTTAATTAAAGTCCCAAAGTCATA

      3190       3200       3210       3220       3230       3240
AGATAAATTGTAGCTCAACCAGAAAGTACACTGTTGCCTGTTGAGGATTTGGTGTAATGT

      3250       3260       3270       3280       3290       3300
ATCCCAAGGTGTTAGCCTTGTATTATGGAGATGAATACAGATCCAATAGTCAAATGAAAC

      3310       3320       3330       3340       3350       3360
TAGTTCTTAGTTATTTAAAAGCTTAGCTTGCCTTAAAACTAGGGATCAATTTTCTCAACT

      3370       3380       3390       3400       3410       3420
GCAGAAACTTTTAGCCTTTCAAACAGTTCACACCTCAGAAAGTCAGTATTTATTTTACAG

      3430       3440       3450       3460       3470       3480
ACTTCTTTGGAACATTGCCCCCAAATTTAAATATTCATGTGGGTTTAGTATTTATTACAA

      3490       3500       3510       3520       3530       3540
AAAAATGATTTGAAATATAGCTGTTCTTTATGCATAAAATACCCAGTTAGGACCATTACT

      3550       3560       3570       3580       3590       3600
GCCAGAGGAGAAAAGTATTAAGTAGCTCATTTCCCTACCTAAAAGATAACTGAATTTATT

      3610       3620       3630       3640       3650       3660
TGGCTACACTAAAGAATGCAGTATATTTAGTTTTCCATTTGCATGATGTGTTTGTGCTAT

      3670       3680       3690       3700       3710       3720
AGACAATATTTTAAATTGAAAAATTTGTTTTAAATTATTTTTACAGTGAAGACTGTTTTC

      3730       3740       3750       3760       3770       3780
AGCTCTTTTTATATTGTACATAGACTTTTATGTAATCTGGCATATGTTTTGTAGACCGTT

      3790       3800       3810       3820       3830       3840
TAATGACTGGATTATCTTCCTCCAACTTTTGAAATACAAAAACAGTGTTTTATACTAAAA

      3850       3860       3870
AAAAAAAAAGTCGACGCGGCCGCGAATTC
```

Fig. 21D

```
       10         20         30         40         50         60
CCACGCGTCCGCGGACGCGTGGGCACGGGACAGAGCAGTCGGTGACAGTCCCGAGGGCCC
   T  R  P  R  T  R  G  H  G  T  E  Q  S  V  T  V  P  R  A  P

       70         80         90        100        110        120
CCACCCCGTTCCCATGGCCGAGCCGGACCGATTCAGACTCGGACACTGAGGGAGGAGCCA
   T  P  F  P  W  P  S  R  T  D  S  D  S  D  T  E  G  G  A  T

      130        140        150        160        170        180
CTGGTGGAGAGGCAGAGATGGACTTCCTGAGGAATTTATTCACCCAGACCCTGGGCCTGG
   G  G  E  A  E  M  D  F  L  R  N  L  F  T  Q  T  L  G  L  G

      190        200        210        220        230        240
GTTCCCAAAAGGAGCGTCTTCTAGACGAGCTGACCCTCGAAGGAGTGACACGCTACATGC
   S  Q  K  E  R  L  L  D  E  L  T  L  E  G  V  T  R  Y  M  Q

      250        260        270        280        290        300
AGAGCGAGCGCTGCCGCAAGGTCATCTGTTTGGTGGGAGCCGGAATCTCCACGTCCGCGG
   S  E  R  C  R  K  V  I  C  L  V  G  A  G  I  S  T  S  A  G

      310        320        330        340        350        360
GTATCCCTGACTTCCGCTCCCCGTCCACTGGCCTCTATGCAAACCTGGAGAAGTACCACC
   I  P  D  F  R  S  P  S  T  G  L  Y  A  N  L  E  K  Y  H  L

      370        380        390        400        410        420
TTCCTTACCCAGAGGCCATCTTTGAGATCAGCTACTTCAAGAAACATCCGGAACCCTTCT
   P  Y  P  E  A  I  F  E  I  S  Y  F  K  K  H  P  E  P  F  F

      430        440        450        460        470        480
TTGCCCTTGCCAAGGAGCTCTATCCCGGGCAGTTCAAGCCAACCATCTGCCACTACTTCA
   A  L  A  K  E  L  Y  P  G  Q  F  K  P  T  I  C  H  Y  F  I

      490        500        510        520        530        540
TCCGCCTGCTGAAGGAGAAGGGGCTGCTGCTGCGCTGCTACACGCAGAACATAGACACGC
   R  L  L  K  E  K  G  L  L  L  R  C  Y  T  Q  N  I  D  T  L

      550        560        570        580        590        600
TGGAACGAGTGGCGGGGCTGGAGCCCCAGGACCTGGTGGAGGCCCACGGCACCTTCTACA
   E  R  V  A  G  L  E  P  Q  D  L  V  E  A  H  G  T  F  Y  T

      610        620        630        640        650        660
CATCACACTGTGTCAACACCTCCTGCAGAAAAGAATACACGATGGGCTGGATGAAAGAGA
   S  H  C  V  N  T  S  C  R  K  E  Y  T  M  G  W  M  K  E  K

      670        680        690        700
AGATTTCTCAGAAGCAACTCCCAGGTGTGAGCAGTGTCA
   I  S  Q  K  Q  L  P  G  V  S  S  V
```

Fig. 22